

What is claimed is:

1. A method for storing and retrieving data comprising:

storing at least one magnetic field strength;

utilizing said at least one stored magnetic field strength to cause directional splitting

5 or shifting of at least one frequency in at least one material;

detecting at least one of a split frequency, a shifted frequency and a splitting

frequency in said at least one material;

assigning a data value to said splitting or shifting of frequency; and

reading said directional splitting or shifting of frequency as said assigned data value.

10 2. The method of claim 1, wherein said detecting comprises interrogating said at least one material with electromagnetic energy to determine said directional shifting or splitting of frequency.

3. The method of claim 1, wherein said at least one material comprises at least one magnetic material.

15 4. The method of claim 3, wherein said at least one material comprises at least one material contiguous to at least one magnetic material.

5. The method of claim 1, wherein said method for storing data comprises a base-2 data storage system.

6. The method of claim 1, wherein said method for storing data comprises greater than a
20 base-2 data storage system.

7. The method of claim 1, wherein said directional splitting or shifting of frequency comprises at least one Zeeman effect.

8. A method for reading data comprising:

utilizing at least one stored magnetic field strength which results in a directional

25 splitting or shifting of at least one frequency in at least one material;

detecting at least one of a directional split frequency, a directional shifted frequency and a directional splitting frequency in said at least one material;
assigning a data value to said directional splitting or shifting of frequency; and
reading said directional shifting or splitting of frequency as said assigned data value.

5 9. A data storage apparatus comprising:

means for determining at least one stored magnetic field strength to be stored, which stored field strength results in at least one of a directional split frequency, a directional shifted frequency and a directional splitting frequency in at least one material;

means for assigning a data value to said directional shifting or splitting of frequency;

10 and

means for storing said at least one stored magnetic field strength.

10. A data reading apparatus comprising:

means for utilizing at least one stored magnetic field strength which results in a directional splitting or shifting of at least one frequency in at least one material;

15 means for detecting at least one of a directional split frequency, a directional shifted frequency and a directional splitting frequency in said at least one material due to said at least one stored magnetic field strength;

means for assigning a data value to said amount of directional splitting or shifting of frequency; and

20 means for reading said directional splitting or shifting of frequency as said assigned data value.

11. The apparatus of claim 9, wherein said at least one material comprises at least one magnetic material.

12. The apparatus of claim 9, wherein said at least one material comprises at least one member selected from the group consisting of magnetic tapes, magnetic cards, and magnetic disks and magnetic hard drives;
13. The apparatus of claim 10, wherein said at least one material comprises at least one magnetic material.
14. The apparatus of claim 10, wherein said at least one material comprises at least one member selected from the group consisting of magnetic tapes, magnetic cards, magnetic disks and magnetic hard drives.
15. A method for storing data comprising;
 - 10 determining at least one stored magnetic field strength to be stored, which stored field strength results in at least one of a directional split frequency, a directional shifted frequency and a directional splitting frequency in at least one material;
 - assigning a data value to said directional splitting or shifting of at least one frequency; and
 - 15 storing said directional splitting or shifting of frequency as said assigned data value.

20

25